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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,666	08/05/2002	George E. Kim	MOG-02/US	5341
23508	7590	10/30/2003	EXAMINER	
LUNDEEN & DICKINSON, LLP PO BOX 131144 HOUSTON, TX 77219-1144			LE, HOA T	
			ART UNIT	PAPER NUMBER
			1773	
DATE MAILED: 10/30/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

CLD-5 *[Signature]*

Office Action Summary	Applicati n N .	Applicant(s)	
	10/064,666	KIM ET AL.	
	Examin r	Art Unit	
	H. T. Le	1773	

-- The MAILING DATE of this communication appears n the cov r sheet with the correspondence address --

Peri d f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-20,25,26 and 28-36 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 12-20,25,26 and 28-36 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claims 12-20, 25, 26 and 28-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 12, the location of the titania coating is unclear. Is it on the ball, the seat or on the substrate?

In claims 25 and 26, "ultrafine particles" has no antecedent basis.

Claims 28 and 29 are confusing. Particles are known to have "grain size", but coating? Clarification or correction is required.

Other claims are deemed indefinite in view of their dependency upon claim 12.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 12-20, and 28-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hong (US 5,545,337).

Claim 12: Hong disclosed a composite comprising a titanium-based substrate whose surface can be made to resist corrosion by coating titania on the substrate. See abstract.

Hong also discloses that the composite can be used in the construction of valve parts. Col.

5, lines 45-49. Therefore, it would have been obvious for one having skill in the art to utilize the titania-coated titanium-based composite taught by Hong in a ball valve construction as claimed. The motivation is to improve the corrosion resistance of the valve parts.

Claims 13-15 and 30-32: Inhibiting of grain growth by using an admix of titania phases is suggested at col. 7, lines 6-18.

Claims 16-18, 28-29, 33 and 34: The method of coating is taught by Hong as by thermal spraying which is the same method applied in the instant invention. Therefore, it is expected that the coating thickness and the titania grain size are within the same thickness and grain size as claimed in order to successfully apply the thermal spray coating.

Claims 19 and 35: col. 7, lines 14-19 and 60+.

Claims 20 and 36: Although Hong does not explicitly teach a pressure acid leaching process using the ball valve, the broad teaching of "aggressive chemical environment" (col. 5, lines 27-30) would have been obvious to one having ordinary skill in the art to encompass "acid leaching".

4. Claims 25 and 26 are not understood because no ultraparticles of titanium are recited in the independent claim 12. Thus the relationship between the "ultraparticles" as recited in these claims to the claimed subject matter is not being established. Therefore, rejection of these claims based on prior art is impossible until claims are amended to correct this deficiency.

5. Other references are cited as art of interest.

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to H. T. Le whose telephone number is 703-308-2415. The examiner can normally be reached on 10:00 a.m. to 8:30 p.m., Mondays to Friday.

A handwritten signature in black ink, appearing to read 'H. T. Le', with a stylized, cursive script.

H. T. Le
Primary Examiner
Art Unit 1773